

**PUBLIC SAFETY DEPARTMENT[661]**

**Adopted and Filed**

**Rule making related to standards for electrical work**

The Electrical Examining Board hereby amends Chapter 504, “Standards for Electrical Work,” Iowa Administrative Code.

*Legal Authority for Rule Making*

This rule making is adopted under the authority provided in Iowa Code section 103.6.

*State or Federal Law Implemented*

This rule making implements, in whole or in part, Iowa Code section 103.6.

*Purpose and Summary*

The purpose of this amendment is to update the Standards for Electrical Work to the National Electrical Code, 2020 edition. Consistent with rule making in this chapter, the entire National Electrical Code (NEC) is adopted, with the amendments included in this chapter. It is the intention of the Department and the Board to not make further amendments, regardless of new additions to the NEC, until it is necessary for the state of Iowa. A significant effect of the adoption of the 2020 edition of the NEC would have been the requirement for 250-volt receptacles, but the Board, in addition to adopting the 2020 edition of the NEC by reference, is amending the 2020 edition to remove that requirement. Although the ground fault circuit interrupter requirement for 250-volt receptacles is removed, it is possible that future NEC amendments will return this provision to the administrative rules.

*Public Comment and Changes to Rule Making*

Notice of Intended Action for this rule making was published in the Iowa Administrative Bulletin on August 26, 2020, as **ARC 5152C**. A public hearing was held on September 17, 2020, at 10 a.m. in First Floor Public Conference Room 125, Oran Pape State Office Building, 215 East 7th Street, Des Moines, Iowa.

Don Iverson, with Schneider-Square D, suggested the Board accept the 2020 NEC without amendments. Mr. Iverson stated that documentation submitted to Code Panel 2 reflected the number of lives lost around outside air conditioners and indoor appliances due to electrocution. As a safety advocate for ground-fault circuit interrupter (GFCI) protection, he would like the Board to change direction in amending the 2020 NEC, stating that GFCI technology has been around since the late 1960s and electrocutions have decreased significantly due to GFCIs installed in homes. Mr. Iverson would like the Board to reconsider its stance on removing 250-volt language, and suggested a possible middle ground to GFCI protection in consideration of public safety. Possible middle ground would be to restore Article 210.8A, where the subcommittee struck the 250-volt language, and then place a sunset on outdoor outlets in Article 210.8F to become effective at the next code adoption.

Tim McClintock, with the National Electrical Manufacturers Association (NEMA), thanked the Board for wanting to adopt the 2020 NEC. Mr. McClintock had previously submitted written comments and reiterated his request that the Board adopt the 2020 NEC without amendments. Mr. McClintock explained the process that the National Fire Protection Association (NFPA) uses with the development of the NEC, where the process is open, transparent and balanced, and accredited by the American National Standards Institute (ANSI). Changes are not made to the NEC unless substantiated by logical reasoning, research, data and statistics — all to promote the practical safeguarding of persons and property from hazards arising from the use of electricity. Mr. McClintock also touched on GFCI equipment that was in the 1971 NEC edition, and stated that published data from the U.S. Consumer Product Safety

Commission shows decreasing trends in electrocutions in the United States. Mr. McClintock stated that NEMA urges the Board to move forward with adoption of the 2020 NEC and reconsider the proposed amendments to remove GFCIs.

Chris Higgins, an Iowa-licensed master electrician and electrical contractor, stated that his only concern is if the 2020 NEC is adopted without amendments, there may be no indication if the electrocutions were due to faulty installation or faulty equipment. Mr. Higgins understands that one life is too many, but questioned whether that is justification for increased cost of GFCIs being put on consumers.

Trevor Williams submitted the following written comments:

1. **Proposed amendment to 210.8(A)(5).** Add the following amendment to existing Exception to (5):

**Exception to (5)** A receptacle supplying only a permanently installed sump pump shall not be required to have ground-fault circuit interrupter protection if all of the following conditions are met:

1. Receptacle supplying permanently installed sump pump shall be of the single use grounding type.

2. Circuit supplying permanently installed sump pump shall have a disconnecting means within 6 feet of the receptacle supplying it.

3. Disconnecting means shall be labeled as “Sump Pump, Disconnect before servicing” or equivalent. Note: Label may be field applied.

2. **Proposed amendment to 230.67(D).** Remove existing language and replace with:

**(D) Replacement.** Where service equipment is replaced, it shall be allowed, but not required, to meet all of the requirements of this section.

3. **Proposed amendment to 230.71 Maximum number of disconnects.**

Remove existing 2020 NEC language and replace with:

230.71 Maximum Number of Disconnects.

(A) General. The service disconnecting means for each service permitted by 230.2, or for each set of service-entrance conductors permitted by 230.40, Exception No. 1, 3, 4, or 5, shall consist of not more than six switches or sets of circuit breakers, or a combination of not more than six switches and sets of circuit breakers, mounted in a single enclosure, in a group of separate enclosures, or in or on a switchboard or in switchgear. There shall be not more than six sets of disconnects per service grouped in any one location.

For the purpose of this section, disconnecting means installed as part of listed equipment and used solely for the following shall not be considered a service disconnecting means:

- (1) Power monitoring equipment
- (2) Surge-protective device(s)
- (3) Control circuit of the ground-fault protection system
- (4) Power-operable service disconnecting means

(B) Single-Pole Units. Two or three single-pole switches or breakers, capable of individual operation, shall be permitted on multiwire circuits, one pole for each ungrounded conductor, as one multipole disconnect, provided they are equipped with identified handle ties or a master handle to disconnect all conductors of the service with no more than six operations of the hand.

Informational Note: See 408.36, Exception No. 1 and Exception No. 3, for service equipment in certain panelboards, and see 430.95 for service equipment in motor control centers.

Chris Higgins submitted the following written comments:

Recommend additional changes as follows to the already proposed rewrite of 210.8(A).

210.8(A)(2) GFCI protection for garage and accessory building receptacles.

Exceptions to (A)(2): The following conditions shall not be required to have ground-fault circuit-interrupter protection:

1. A dedicated ceiling mounted receptacle for a garage door opener.
2. A single receptacle supplied by a dedicated branch circuit that is located and identified for specific use by a cord- and plug-connected appliance such as a refrigerator or freezer.
3. A dedicated receptacle supplying a permanently installed fire alarm or security alarm system.

4. A dedicated receptacle supplying a sump pump.

Receptacles installed under exception to 210.8(A)(2) shall not be considered as meeting the requirements of 210.52(G).

210.8(A)(5) Unfinished portions or areas of the basement not intended as habitable rooms.

Exceptions to (A)(5): The following conditions shall not be required to have ground-fault circuit-interrupter protection:

1. A receptacle supplying only a permanently installed fire alarm or burglar alarm system.
2. A single receptacle supplying a permanently installed sump pump.
3. A single receptacle supplied by a dedicated branch circuit that is located and identified for specific use by a cord- and plug-connected appliance such as a refrigerator or freezer.

Receptacles installed under exception to 210.8(A)(5) shall not be considered as meeting the requirements of 210.52(G).

No changes from the Notice have been made.

#### *Adoption of Rule Making*

This rule making was adopted by the Board on October 15, 2020.

#### *Fiscal Impact*

This rule making has no fiscal impact to the State of Iowa.

#### *Jobs Impact*

After analysis and review of this rule making, no impact on jobs has been found.

#### *Waivers*

Pursuant to the provisions of rule 661—10.222(17A), the Department does not have authority to waive requirements established by statute. Any person who believes that the application of the discretionary provisions of this rule making would result in hardship or injustice to that person may petition the Department for a waiver of the discretionary provisions, if any, pursuant to the provisions of rule 661—10.222(17A).

#### *Review by Administrative Rules Review Committee*

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rule making by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rule making at its [regular monthly meeting](#) or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

#### *Effective Date*

This rule making will become effective on January 1, 2021.

The following rule-making action is adopted:

Amend **661—Chapter 504** as follows:

#### **CHAPTER 504 STANDARDS FOR ELECTRICAL WORK**

**661—504.1(103) Installation requirements.** The provisions of the National Electrical Code, 2017 2020 edition, published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169-7471, are adopted as the requirements for electrical installations performed by persons licensed pursuant to 661—Chapters 500 through 503 and to installations subject to inspection pursuant to Iowa Code chapter 103 with the following amendments:

**504.1(1)** ~~Delete section 210.12(D).~~ Delete section 210.8(A) and insert in lieu thereof the following new section:

210.8(A) Dwelling Units.

All 125-volt receptacles installed in locations specified in 210.8(A)(1) through 210.8(A)(11) shall ground-fault circuit-interrupter protection for personnel.

(1) Bathrooms

(2) Garages and also accessory buildings that have a floor located at or below grade level not intended to be habitable rooms and limited to storage areas, work areas or similar use

(3) Outdoors

Exception to (3): Receptacles that are not readily accessible and are supplied branch circuit dedicated to electrical snow-melting, deicing, or pipeline and vessel heating equipment shall be permitted to be installed in accordance with 426.28 or 427.22, as applicable.

(4) Crawl spaces – at or below grade level

(5) Basements

Exception to (5): A receptacle supplying only a permanently installed fire alarm or burglar alarm system shall not be required to have ground-fault circuit-interrupter protection.

Informational Note: See 760.41B and 760.121(B) for power supply requirements for fire alarm systems.

Receptacles installed under the exception to 210.8(A)(5) shall not be considered as meeting the requirements of 210.52(G)

(6) Kitchens – where the receptacles are installed to serve the countertop surfaces

(7) Sinks – where receptacles are installed within 1.8 m (6 ft) from the top inside edge of the bowl of the sink

(8) Boathouses

(9) Bathtubs or shower stalls – where receptacles are installed within 1.8 m (6 ft) of the outside edge of the bathtub or shower stall

(10) Laundry areas

Exception to (1) through (3), (5) through (8), and (10): Listed locking support and mounting receptacles utilized in combination with compatible attachment fittings installed for the purpose of serving a ceiling luminaire or ceiling fan shall not be required to be ground-fault circuit-interrupter protected. If a general-purpose convenience receptacle is integral to the ceiling luminaire or ceiling fan, GFCI protection shall be provided.

(11) Indoor damp and wet locations

**504.1(2)** ~~Delete section 406.4(D)(4).~~ Delete section 210.8(F).

This rule is intended to implement Iowa Code chapter 103.

[Filed 10/20/20, effective 1/1/21]

[Published 11/18/20]

EDITOR'S NOTE: For replacement pages for IAC, see IAC Supplement 11/18/20.